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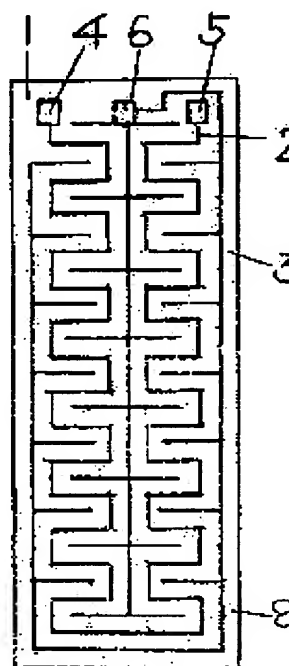
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(54) SEALING DESTRUCTION DETECTING SEAL

(57)Abstract:

PROBLEM TO BE SOLVED: To make it possible to detect the cutting/short circuit of a lead wire extending to a sensor part by connecting a two-core shielding wire, etc., or a terminal resistance to the lead wire to be connected to the sensor part.

SOLUTION: A sealing destruction detecting seal has a detection circuit, in which a wire conductive material 2 and a wire conductive material 3 are alternately closely arranged and are put in a plane form on the adhered surface of the sealing paper 1, thereby allowing the peeling, cutting, etc., of the sealing paper to be detected as the cutting of the wire conductive material 2 or the short circuit between the wire conductive material 2 and the wire conductive material 3. The two-core shielding wire or the terminal resistance is utilized, thereby allowing the direction of a signal current not to be read from outside. The short circuit or peeling applied on the electric wire or seal is caught as the change of current value and a signal is transmitted.



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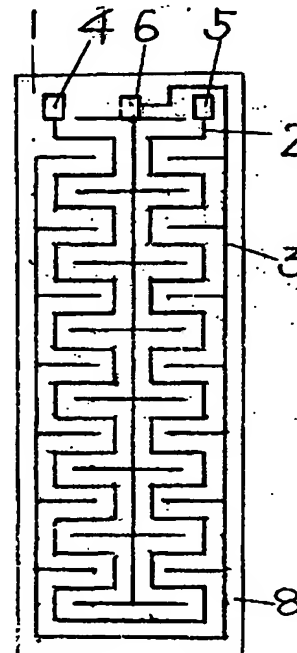
BB22 CC31 DD74 EE07

(54) 【発明の名称】 封印破壊検知シール

(57) 【要約】

【課題】 信号線が露出する場合、その信号電流の方向から信号線が短絡されセンサーの働きをしないようにされるため、封印をセンサー等で監視することは危険性が高いとされてきた。

【解決手段】 封印紙1の接着面に線状導電材2と線状導電材3を交互に近接させ面状に敷設した検知回路を有し、封印紙の剥離、切断等を線状導電材2の切断、又は線状導電材2と線状導電材3の短絡として検知できるようにし、2芯シールド線や終端抵抗を利用することによって信号電流の方向を外部から読み取られないようにし、電線やシールに加えら短絡や剥離を、電流値の変化としてとらえ信号を発する構造とした。



【特許請求の範囲】

【請求項1】 封印紙1の接着面に線状導電材2と線状導電材3を交互に近接させ面状に敷設した検知回路を有し、封印紙1の剥離、切断等を線状導電材2の切断、又は線状導電材2と線状導電材3の短絡として検知することを特徴とする封印破棄検知シール。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】 本発明は、各種封印紙を破棄して行われる違法行為を着手時に検知することのできる封印破棄検知シールに関する。

【0002】

【従来の技術】 従来、この種の破棄検知については、光ファイバーや線状導電材を面状に敷設したシールを防護壁やトランクの接合部裏側に貼り付け、工具等により、その線の存在に気付かず切断したときに生じる光や電流の遮断から、各種破壊検知を行うものが公知手段としてあるが、開封検知対象物表面に施される封印そのもので破棄時を検知するものは、露出となる信号線が簡単に短絡される危険性が高く未だ存在しない。

【0003】

【発明が解決しようとする課題】 従来の技術で述べたもののうち、光ファイバーについては、光を遮断しないで取り替えることは不可能であり、この種の検知には最適ではあるが切断しにくく折り曲げにくい特徴があり、シール状に加工しにくいだけでなく、光ファイバーごと剥離される危険性もあり、目視できる場所にある封印等に組み込むことは難しい。線状導電材の断線によって検知する方法はセンサーに至る信号線を簡単に短絡し信号を出ないようにして封印を破棄する危険性があり開封検知対象物の表面に使用するには難しい問題がある。

【0004】 本発明は、従来の技術が有するこの様な問題点に鑑みてなされたものであり、その目的とするところは、センサー部に接続する導線に2芯シールド線等や終端抵抗を接続することにより、センサー部に至る導線の切断・短絡を検知することを可能にし、更に不透明な封印紙の下側に2本の線状導電材を交互に近接させ面状に敷設しその線状導電材の切断・短絡により警報を発する回路を設けることが封印紙に加えられる破棄行為を検知する最も確実な手段方法と考えられる。

【0005】

【課題を解決するための手段】 上記目的を達成するために、本発明における封印破棄検知シールの封印紙1は不透明とする。

【0006】 封印紙1の接着面側に線状導電材2と線状導電材3が交互に近接するよう配置し、その線の幅は0.5mm以下、線状導電材間の間隔は1mm以下が好ましい。

【0007】 線状導電材2の両端に端子4・5を設け、線状導電材3の線上の一点に端子6を設ける。

【0008】 端子4と5へは、信号線の被覆線11・12を、端子6へはシールド線10をそれぞれ接続した検知回路を構成する。

【0009】 封印紙1には、偽造等を防止するため指定された印刷7を施す。

【0010】 封印紙1の接着面には、開封検知対象部に貼り付けるため強力粘着剤シール8と剥離紙9で構成する。

【発明の実施の形態】 発明の形態を実施例にもとづき図面を参照して説明する。図1～4において、本発明の封印破棄検知シールを使用する場合は、まず前述した通り

【0011】 強力粘着剤シール8から剥離紙9（貼付け後不要）を剥がし開封検知対象部に貼付する。

【0012】 端子5・6間に固定抵抗 $R[\Omega]$ を接続する。

【0013】 端子4・6間に一定電圧 $E[V]$ を加える。

【実施例】

【0014】 本発明の封印破棄検知シールに接続する2芯シールド線10・11・12を、針やカッターナイフ等の金属で短絡・切断しようとした場合、シールド線10と被覆線11又は12が短絡し、更に切断してしまうと被覆線11・12が切断するような構造とする。

【0015】 封印紙1をそのまま剥がした場合、封印紙1が破れて線状導電材2のパターンが切断し端子4・5間が断線状態となる。又カッターナイフ等で剥離しようとした場合には、近接する線状導電材2と線状導電材3が刀物等を介して短絡し、各端子4・5・6に導通が生じる。

【0016】 封印紙1を剥がした場合、強力接着剤シール8と封印紙1の間にある線状導電材2・3のパターンが封印紙1の破れによって切断するような構造にする。

【発明の効果】 本発明は以上説明したように構成されているので、以下に記載されるような効果を奏する。

【0017】 「抵抗に流れる電流は、電圧に比例し、抵抗に反比例する」オームの法則から、 $E[V]$ の電源に $R[\Omega]$ の抵抗を接続したとき、この検知回路に流れる電流を $I[A]$ とすれば、 $I=E/R[A]$ の関係式が成立する。従って電圧が一定であり、端子4・6間における抵抗値の変化は、端子5・6に固定抵抗 $R\Omega$ を接続した場合、正常時が $R\Omega$ +線間抵抗で有ののに対し、異常時である短絡時は線間抵抗のみ（数 Ω ）、断線時には、無限大となる。このことから、導電材間の短絡・断線による電流値の変化を検知することで容易に、封印破棄を検知できる。

【0018】 短絡または断線により出力する構造にすることによって開封検知対象物の表面取り付けられ、不透明な封印紙1の使用により、線状導電材2・3の配列パターンを読まれることもなく、どの方向から剥離した

り針先等で悪戯しても警報を発する構造とした。

【0019】 封印紙1を薄く一枚のシール状にすることによって貼り易くし逆に剥離することを難しくし、万一又元通り貼り付けた場合でも、封印紙1に塗布する接着剤によって層が生まれ、線状導電材2・3短絡・断線状態となる。

【0020】 端子5・6へ、次の封印破棄検知シールの端子4・6を接続し、最終の封印破棄検知シール端子5・6に固定終端抵抗を接続することで複数の貼付が可能となる。

【0021】 センサー用の電源を必要とせず2線または3線による検知が可能とした。

【0022】 総じて外部から、端子の位置だけでなく信号電流の方向が確認できなくし、直接開封検知対象部へ貼付することによって、正確に封印破棄時を検知できるようにした。

【図面の簡単な説明】

【図1】 本発明の封印破棄検知シールの接着面側平面図である。

【図2】 本発明の封印破棄検知シールの回路図である。

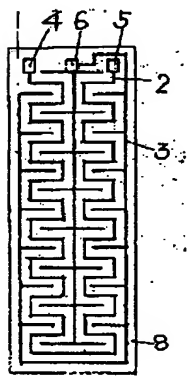
【図3】 封印破棄検知シールを複数接続した系統図である。

【図4】 封印破棄検知シールを開封検知対象物に貼付した使用態様図である。

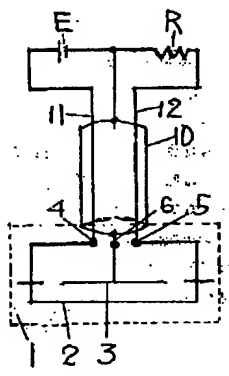
【符号の説明】

- 1 封印紙
- 2 線状導電材
- 3 線状導電材
- 4 端子
- 5 端子
- 6 端子
- 7 印刷
- 8 強力粘着剤シール
- 9 剥離紙
- 10 シールド線
- 11 被覆線
- 12 被覆線
- ア 開封検知対象部
- R 抵抗
- E 電圧
- I 電流

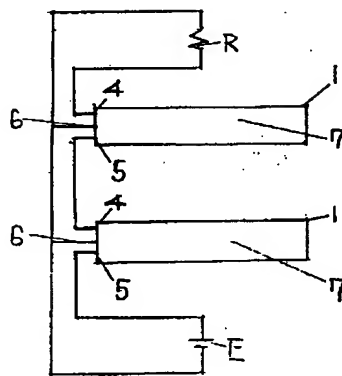
【図1】



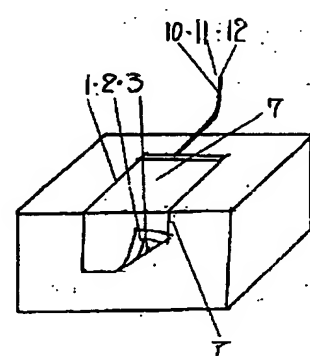
【図2】



【図3】



【図4】



JAPANESE

[JP,2000-029390,A]

CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE INVENTION TECHNICAL
PROBLEM MEANS EXAMPLE DESCRIPTION OF DRAWINGS DRAWINGS

[Translation done.]

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CLAIMS

[Claim(s)]

[Claim 1] the adhesion side of the seal paper 1 -- a line -- the electric conduction material 2 and a line -- the detecting circuit which the electric conduction material 3 was made to approach by turns, and was laid in the shape of a field -- having -- exfoliation of the seal paper 1, cutting, etc. -- a line -- cutting of the electric conduction material 2, or a line -- the electric conduction material 2 and a line -- the seal destruction detection seal characterized by what is detected as a short circuit of the electric conduction material 3.

[Translation done.]

JAPANESE

[JP,2000-029390,A]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the seal destruction detection seal which can detect the malpractice performed by canceling various seal papers at the time of start.

[0002]

[Description of the Prior Art] The seal which laid electric conduction material in the shape of a field is stuck on the joint background of a protective barrier or a trunk. the former and this kind of destruction detection -- an optical fiber and a line -- by a tool etc. Although what performs various destructive detection is made into the well-known means from cutoff of the light and the current which are produced when he has not noticed the line existence but it cuts, the danger that the signal line which is exposed will short-circuit simply does not yet exist highly in what detects the time of destruction by the seal itself given to an opening detection object front face.

[0003]

[Problem(s) to be Solved by the Invention] It is difficult to include in the seal which has the danger of it being not only hard to process it in the shape of a seal, but there being the description which cannot cut easily and is hard to bend although it is impossible to exchange without intercepting light about an optical fiber and it is the the best for this kind of detection, and exfoliating the whole optical fiber, among what was stated by the Prior art, and is in the location which can be viewed. a line -- the approach of detecting by open circuit of electric conduction material has a problem difficult for there being a danger of canceling a seal as the signal line which results in a sensor is short-circuited simply and it does not come out of a signal, and using it for the front face of an opening detection object.

[0004] The place which this invention is made in view of such a trouble that a Prior art has, and is made into the object By connecting 2 heart shielding wire etc. and a terminator to the lead wire linked to the sensor section It makes it possible to detect cutting and the short circuit of the lead wire which results in the sensor section. furthermore, the opaque seal paper bottom -- two lines -- electric conduction material is approached by turns -- making -- the shape of a field -- laying -- the line -- cutting [of electric conduction material] - simplistic -- it is considered to be the most positive means approach that detects the destruction act added to seal paper to prepare the circuit which emits an alarm more.

[0005]

[Means for Solving the Problem] In order to attain the above-mentioned object, the seal paper 1 of the seal destruction detection seal in this invention presupposes that it is opaque.

[0006] the adhesion side side of the seal paper 1 -- a line -- the electric conduction material 2 and a line -- the electric conduction material 3 approaches by turns -- as -- arranging -- the width of face of the line -- 0.5mm or less and a line -- spacing between electric conduction material has 1 desirablenmm or less.

[0007] a line -- the ends of the electric conduction material 2 -- a terminal 4-5 -- preparing -- a line -- a terminal 6 is formed in one on the line of the electric conduction material 3.

[0008] The detecting circuit which connected the covered wire 11-12 of a signal line to terminals 4 and 5, and connected shielding wire 10 to the terminal 6, respectively is constituted.

[0009] Printing 7 specified as it in order to prevent forgery etc. on the seal paper 1 is performed.

[0010] In the adhesion side of the seal paper 1, in order to stick on the section for opening detection, it constitutes from a powerful binder seal 8 and a releasing paper 9.

[Embodiment of the Invention] The gestalt of invention is explained with reference to a drawing based on an example. It is

[0011] as it mentioned above first in drawing 1 -4, when the seal destruction detection seal of this invention was used. A releasing paper 9 (unnecessary after attachment) is removed from the powerful binder seal 8, and it sticks on the section for opening detection.

[0012] Fixed-resistance R [Ω] is connected between terminals 5-6.

[0013] Fixed electrical-potential-difference E [V] is added between terminals 4.6.

[Example]

[0014] When 2 heart shielding wire 10-11-12 linked to the seal destruction detection seal of this invention is connected too hastily and cut and it has it with metals, such as a needle and a cutter knife, shielding wire 10, covered wire 11, or 12 connects too hastily, and if it cuts further, it will consider as structure which covered wire 11-12 cuts.

[0015] the case where the seal paper 1 is removed as it was -- the seal paper 1 -- being torn -- a line -- the pattern of the electric conduction material 2 cuts and between terminals 4-5 will be in an open-circuit condition. moreover, the line which approaches when it is going to exfoliate with a cutter knife etc. -- the electric conduction material 2 and a line -- the electric conduction material 3 connects too hastily through **** etc., and a flow arises for each terminal 4-5-6.

[0016] the line which is between the super glue seal 8 and the seal paper 1 when the seal paper 1 is removed -- it is made structure which the pattern of the electric conduction material 2-3 cuts by the tear of the seal paper 1.

[Effect of the Invention] Since this invention is constituted as explained above, effectiveness which is indicated below is done so.

[0017] When resistance of R [Ω] is connected to the power source of E [V] from the Ohm's law "to which the current which flows to resistance is proportional to an electrical potential difference, and in inverse proportion to resistance", I [A], then the relational expression of $I=E/R$ [A] are materialized in the current which flows to this detecting circuit. Therefore, an electrical potential difference is fixed and only resistance between lines serves as infinity to the resistance value change between terminals 4.6 having always [forward] by resistance between Rohm+ lines, when R ohms of fixed resistance are connected to a terminal 5-6 at the time of (several ohms) and an open circuit at the time of the short circuit which it is at the abnormality time. From this, seal destruction is detectable easily by detecting the current value change by the short circuit and open circuit between electric conduction material.

[0018] an opening detection object attaches surface picking by making it the structure outputted by the short circuit or open circuit -- having -- the activity of the opaque seal paper 1 -- a line -- without reading the array pattern of the electric conduction material 2-3, even if got into mischief [exfoliated from which direction or / the needle point etc.], it considered as the structure which emits an alarm.

[0019] the adhesives applied to the seal paper 1 even if ** which makes it easy to stick by making seal paper 1 into the shape of one seal thinly, and exfoliates conversely should be made difficult and should be stuck as before again -- a layer -- being born -- a line -- it will be in electric conduction material 2 and 3 short circuit / open-circuit condition.

[0020] Two or more pastings by connecting the terminal 4-6 of the following seal destruction detection seal to a terminal 5-6, and connecting a fixed terminator to it at the last seal destruction detection seal terminal 5-6 are attained.

[0021] The power source for sensors was not needed but detection by two lines or three lines was enabled.

[0022] It enabled it to detect the time of seal destruction to accuracy by carrying out by the ability not checking the direction not only of the location of a terminal but the signal current, and sticking from the exterior, to the section for direct opening detection generally.

[Translation done.]

JAPANESE

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the adhesion side side top view of the seal destruction detection seal of this invention.

[Drawing 2] It is the circuit diagram of the seal destruction detection seal of this invention.

[Drawing 3] It is the schematic diagram which connected two or more seal destruction detection seals.

[Drawing 4] It is activity mode drawing which stuck the seal destruction detection seal on the opening detection object.

[Description of Notations]

1 Seal Paper

2 Line -- Electric Conduction Material

3 Line -- Electric Conduction Material

4 Terminal

5 Terminal

6 Terminal

7 Printing

8 Powerful Binder Seal

9 Releasing Paper

10 Shielding Wire

11 Covered Wire

12 Covered Wire

** The section for opening detection

R Resistance

E Electrical potential difference

I Current

[Translation done.]